FREQUENCY SYNTHESIZER UNIT DSG-2235

USER'S MANUAL

1. Description

The programmable PLL unit DSG-2235 can generate any desired signal from 2250MHz to 3550MHz with 1Hz resolution.

2. Specification

2-1. Electrical specification

(1)	Output frequency range :	2250MHz ～3550MHz
(2)	Frequency resolution :	1Hz
(3)	Output level :	10dBm±2dB
(4)	Output impedance :	50Ω
(5)	Frequency stability :	±1ppm
(6)	Phase noise :	90dBc/Hz at 100KHz
(7)	Spurious :	less than -55dBc
(8)	Harmonics spurious :	less than -10dBc
(9)	Supply voltage/current :	+6V±5%, less than 1A
		+15V±10%, less than 0.2A
(10)	How to set frequency :	RS-232C asynchronous serial data

2-2 Environment Specifications

(1) Operating temperature range   0℃～+50℃

2-3 Construction and dimensions

(1) Dimensions :   125x110x27mm
                                 (not including connectors)
                                 See the drawing of #0010785
(2) Output connector :   SMA-J
(3) Reference input connector : SMA-J
(4) Frequency control connector : D-SUB 9 pin female
(5) Power Supply: Feed-through capacitor lead
(6) Weight :   460g

3 Control command

3-1 Asynchronous Communication setting

speed	9600BPS
data length	8 bit
stop bit	1 bit
parity	None
flow control	None

3-2 D-SUB 9 pin connector pin assignment

pin #	signal name	equipment < - > terminal	Remarks
1	CD		not used
2	RD	→	
3	TD	←	
4			not used
5	GND	⇔	
6	DSR		not used
7	RTS		not used

3-3 Type of control command

(1) Frequency setting command

This is to set output frequency

(2) STAT command

This is to confirm the setting value.

(3) SAVE command

This is to memorize the current frequency

(4) EXT command

This is to switch the reference clock input source to internal or external.

4 Details of the control command

4-1 Definition

Character strings with " " is ASCII code. CR, LF are the control command and mean 0D(hex) or 0A(hex). If the data format is not correct or some errors occurred during the transfer, "INVALID!!"LF CR"＊"will be returned. When the command is transferred correctly, ＊ code is returned. DSG-2235 is

echo-backed all input data.

4-2 Frequency setting command

Frequency data can be entered in three different types of formats, MHz, KHz and Hz.

(1) How to set frequency at MHz unit

The example below shows the data of setting 2479MHz.

"2479M"CR

In this case the data under 100KHz is set "0".

(2) How to set frequency at KHz unit

The example below shows the data of setting 2479001KHz.

"2479001K" CR

In this case the data under 100Hz is set "0".

(3) How to set frequency at Hz unit

The example below shows the data of setting 2479000001Hz.

"2479000001" CR

Cautions : When DSG-2235 has optional frequency divider,
the output frequency is divided according to the optianl divider ratio.

4-3 STAT command

When "STAT" CR is entered, the current status of DSG-2235 is obtained.
The response format is as follows :

"ffffffffff""Hz", ssssss" CR LF"∗"

"f... ...." shows the present output frequency at Hz. "sssss" shows the status of PLL lock, displayed "LOCK" OR "UNLOCKED"

4-4 SAVE command

When "SAVE"CR is entered, the current frequency can be memorized into non-volatile RAM. When power is off and on again, the stored frequency can be retrieved.

4-5 EXT command

When "EXT"CR is entered , the status of reference clock source is displayed as

follows.

"CURRENT CLOCK SOURCE IS ⇒ XXXXXX"

"Do you want to change clock source?(Y/N)"

xxxxxx should be displayed "EXTERNAL" or INTERNAL". If changed, input "Y".

5. Cautions

5-1 Use the power supply stabilized by low noise series regulators. When the switching power supply is used, use filter to reduce switching noise from power supply.

5-2 Attach DSG-2235 side panel to chassis or heat sink not to raise the unit's temparature

4-M2.6

12.5 14.5

110

125

27

14.5 12.5

58

RFOUT

RS-232C

REF

+15V   +6V

6.5

10

38.5

34

15

6